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Solving the **Constipation** *Problem*



COLITIS

By

C.D. Singh

SOLVING THE CONSTIPATION PROBLEM

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LUCKNOW

Nature Cure Council of Medical Research

51-52 GWYNNE ROAD

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PREFACE

THESE are trying days. Across the seas so-called civilized human beings are busy, engaged in destroying each other; at home in this wonderful country, class and race hatred is being preached while many people are perplexed by the great difficulty of finding sufficient means of livelihood. Surrounded by such gloomy atmosphere it is not surprising to discover that people are too disturbed and troubled to devote sufficient attention to their health. Yet, now more than ever before is it essential to be prepared. Be prepared to cope with an emergency, any task, mental or physical. If health is lost burdens cannot be shouldered capably. In the end not only does the sick party suffer but his loved ones as well.

With this in mind you should take inventory of yourself. You have reached the state of adulthood, but do you possess adequate vitality, enthusiasm, energy and ability to cope with mature thought and action when on the job facing life's emergencies and difficult moments? Your biggest possession is *habit*. You have a habit of getting up in the morning with a headache and bad taste in your mouth. You are always tired and sleepy—your sleep is not refreshing. Your back aches. Your eyes are dull, feel dry and burn. You have a sour stomach and annoying gas pains, the gases you pass are foul-smelling and offensive. Your feet are cold, you feel weak and nervous and your energy is at a low ebb. Often there is no appetite, on other occasions you are hungry all the time. You have **CONSTIPATION**.

Many people live abnormal lives, being irritable, melancholy, and unable to maintain any interest in life because of constipation. It gains a foothold long before one becomes aware of the source of his sickness and ill feelings. When one looks about him and sees so much suffering and distress he realizes that constipation is almost a universal disease, with few people recognizing how insidious and far-reaching are its consequences in its first stages.

Your very first intestinal pains should be viewed with alarm and intelligent steps should be taken for corrective treatments

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Price Rs. 3 95

Printed by S. Khark Singh at the Broadway Printing Press,
Lucknow, and published by Dr. S. J. Singh at
51-52, Gwynne Road, Lucknow-1.

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immediately. Constipation should not be ignored and considered a temporary condition that will be cleared up by taking strong laxatives. Such measures are not only disturbing to the digestion and irritating to the intestinal tract, but frequently cause chronic constipation due to the necessity of increased dosage. When you suffer from constipation you set the scene for many major diseases.

So make up your mind *now* that you will **ELIMINATE CONSTIPATION FOR ALL TIME!** Set up some new habits of living and start on a building programme with the help of this book. If you will closely follow the simple instructions so lucidly presented, that will in a short time make you the proud possessor of a healthy blood-stream, a clean colon, freedom from constipation, and daily natural elimination. All this gain will make you very jubilant of your determination and effort, and increase your ability to enjoy a fuller life and make you more efficient on the job each day.

So much of your success rests in your own hands, so strive to obtain and keep the key which unlocks the secret of internal cleanliness, through a sensible diet, and sane, natural living.

S. J. Singh

In the race of life, the
man with the educated bowels will
eclipse the man with the educated
brain ; and the laxatives 'that
work while you sleep' will in short
while prevent you from working
when you are awake.

—*Elbert Hubbard*

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SOLVING THE CONSTIPATION PROBLEM

CHAPTER 1

CONSTIPATION AND WHAT IT DOES

CONSTIPATION is the condition in which the stools are too infrequent and tend to contain too little water. It is characterized by sluggish action of the bowels. For some reason the evacuation of waste matter from the large intestines has become difficult, and there is an abnormal retention of normal or dry faecal material in the colon due to either delayed or incomplete evacuation.

Constipation is a disease little known among savages and wild animals, but very common among civilized people and domestic animals. It has become so common among people of civilized countries that this has been called "the age of constipation." At least three-fourths of the chronic patients that come to us for treatment, suffer from chronic constipation in its worst forms. Many of them tell us that they have not had a natural movement of the bowels for many years. This alone is sufficient to show that the ordinary methods of living and of treating human ailments are faulty and inadequate.

Civilization, or the habits and customs of civilization rather has made of us all a constipated race of softies, dependents and physical weaklings. Civilization has made our lives more comfortable than our ancestors, yet many of these changes of ease and luxury have brought with them the cause of constipation and its kindred ills.

Habit is a most important cause of constipation. Civilization should mean civil, composed, poise. Notwithstanding this fact we are a people going in high-gear day and night. We go at a seventy mile per hour speed and running an hour late. We live as though

You know the model of your car,
You know just what its powers are,
You treat it with a deal of care,
Nor tax it with more than it can bear,
But as to self, that's different.
Your mechanism may be bent,
Your carburetor gone to grass,
Your engine just a dusty mass.
Your wheels may wobble and your cogs
Be handed over to the dogs,
You skip and skid and slide,
Without a thought of things inside.
What fools, indeed we mortals are
To lavish care upon a car
With ne'er a bit of time to see
About our own machinery.

J. K. Bangs

you call your doctor, the first thing he does is to make sure the alimentary tract is clean. Why? Because he knows that every ailment and disease is nothing more nor less than the shadow or reflection of poisons in the system, from constipation. Doesn't matter whether the symptoms and clinical picture is present or not.

Every cell, tissue and organ of the body may become constipated. Outside the intestinal tract it is usually referred to by such terms as stasis, congestion, retarded, swelling, engorged, oedema, tumour, hypertrophy, and so on. Catarrh is constipation of the mucous membranes; gallstones—constipation of the bile; diabetes—constipation of the pancreas and liver; skin eruptions—constipation of the bowels, kidneys and skin; arthritis—constipation in the joints; stomach trouble—constipation of the stomach; eye trouble—constipation of the fluids and tissues of the eye. And so it goes all down the long list of ailments and disease.

Constipation does not stop at being physical enemy number one, but with its fermenting, putrefying, body-brew, perverts our judgement, stifles our morals, weakens self-control, breaks down character and stirs up trouble. Of course, it is respectably labeled by the public as “auto-intoxication” (brewing your own !).

People poisoned by constipation are not their natural selves. Domestic scraps, neighbourhood fights, street brawls, capital and labour troubles, misunderstandings between parent and child, teacher and pupil, frequently are the direct result of constipation irritability.

we only had just one day left and it was half gone. In our mad rush, we delay and postpone nature's call for bowel movement until a more convenient time, and a more suitable place. This neglect is frequently the beginning of that dreadful, pernicious condition of constipation.

Primitive man lived an active, natural life. He knew no time nor place. He obeyed the call of nature when it came. Stooling did not have to wait on social convenience. He had no lights and slept long hours. His diet was natural, mostly of fruits and vegetables, eaten raw and grown from virgin soils that were saturated with minerals and vitamins. Primitive man drank abundant quantities of water. The habit of drinking water freely greatly aids in normal regulation of the intestines and the correction and prevention of constipation.

The Perils of Constipation

Constipation is well termed as "mother of ailments." While itself only a symptom of failure on the part of the muscles of the large intestine, it becomes in turn one of the primary causes of a host of other constitutional diseases. Inactivity of the bowels causes retention of waste and morbid matter which should have been promptly eliminated, and this retention results in body poisoning or autointoxication giving rise to so many disorders and ailments.

When food residues and body wastes are permitted to stagnate in the colon, they undergo putrefaction, and the poisonous products produced paralyze the intestine. The mucous membrane becomes infected, resulting in colitis, causing contraction or spasm, the so-called spastic condition of the colon. This condition affects most frequently the descending colon and is often the cause of pain in the left lower portion of the abdomen, also of pain in the back.

The production of gases causes over-distension of the caecum and ascending portion. Sometimes the caecum becomes a flaccid pouch, in which putrefying residues accumulate and remain for days and even weeks.

There is not one disease known to man, from head to heel, that constipation does not fan to flame and fertilize the soil. When

neurasthenia, melancholia, intestinal ulceration, chronic colitis, spasm or hypertrophy of the sphincter ani due to fissure, blind fistula, or neighbouring inflammation or ulceration.

Results of Pill Using

The medical treatment of constipation, consisting largely in the administration of laxatives and cathartics, gives only temporary relief and tends to benumb and paralyze the intestines more completely. Some patients start their laxative cycle supposedly to help some non-intestinal complaint, such as a headache, backache, or acne, little knowing or realizing that all laxatives and purgatives are poisonous to the system or they would not produce their peculiar drastic effects. They do not act upon the system but the system acts upon the drugs. Being poisons, the body tries to expel these enemies to health and life by copious excretions from the liver and from the walls of the intestines. This eventually produces an evacuation of the contents of the bowels, but every time such violent artificial situation is resorted to, the liver and the membranous linings of the intestinal tract and the nerves which supply them, become more benumbed and inactive. Many cases of inflammation of the intestines, called "colitis," etc., are simply inflammation injuries, due to the use of drastic drugs of purgation.

Inflammation of the tender lining of the intestines, is only one evil. The violent and drastic stimulation following drugging causes the muscles of the digestive tract to shrink, shrivel up, and become flabby. The lower end of the bowel may become so benumbed and flabby that it protrudes from the body, toneless and with no power. We find this frequently in people who have habitually used calomel or have taken other mercurial laxatives. Quinine and the derivatives of opium also have a very paralyzing effect upon the digestive tract. The acute catarrhal conditions characterized by frequent purging are indicated by recurring attacks of diarrhoea, mucus passing in the stool, etc.

The great number of remedies offered and the constant appearance of new ones are evidence of the baffling nature of the disorder and the eager search for better means of relief.

CHAPTER 2

CAUSES OF CONSTIPATION

CONSTIPATION, like so many other complaints, is not so much a disease in itself as an evidence of general body ill-health. In other words, constipation is often due not to any weakness or defect of the bowels themselves so much as to general debility, bodily ill-health, and above all enervation.

The lowered vitality and the resulting constipation can usually be traced to one or more of the following causes :

- (1) Faulty diet—use of high protein and starchy foods; lack of bulkage and vitamins; an insufficient intake of fat.
- (2) Insufficient food; overeating; irritating foods.
- (3) Habitual neglect of the calls of nature.
- (4) Neglect to take proper exercise; sedentary life.
- (5) Shallow breathing and insufficient fresh air.
- (6) Lack of sunshine.
- (7) Defective skin hygiene.
- (8) Overuse or habitual use of purgatives or enemas.
- (9) Worry or grief, excitement, and wrong mental and emotional attitude; mental strain from overwork and irritation.
- (10) Heavy, unhealthy and constricting clothing.
- (11) Weak abdominal walls caused by pregnancy.
- (12) Regular use of tobacco; morphinism.
- (13) The daily consumption of alcoholic drinks, particularly wines and hard liquors, *i.e.*, containing lime salts; use of astringent liquids or tannic acid preparations, such as strong tea or coffee.
- (14) Insufficient or too much drinking of pure water.
- (15) Too much straining at stools.
- (16) Irregular sleeping hours, which taxes your nervous system and lowers your resistance.
- (17) Diseases like chronic gastric disease, indigestion (hyper-acidity), anaemia, debility, obesity, hysteria, mucous colitis,

No progress was made until the X-ray began to throw light upon the colon functions through the researches of Prof. Cannon of Harvard University on animals, Hurst of London, and the observations of Holzknecht of Vienna and Dr. James T. Case of the Battle Creek Sanitarium.

Old methods of treating constipation were based upon the idea that the colon becomes sluggish or lazy and needs to be aroused or forced to do its work. The new knowledge shows that the colon is never dilatory and rarely if ever paralyzed, but is hindered or crippled and needs help, not irritation.

To cure constipation the cause must be removed. To understand the causes of constipation we must know something of the normal functioning of the colon.

Functions of the Colon

The colon or large intestine is normally a floating organ which is easily distended and which retains its contents for a relatively long time. It varies in length and size, and its main functions are :

1. Defaecation;
2. Absorption;
 - (a) Most of the absorption of water, vitamins of the B-complex, minerals, salts, and sugar takes place in the colon.
3. Secretion of muns;
 - (a) Less mucus is secreted when the body is at rest;
 - (b) More mucus is secreted during periods of activity or under abnormal conditions, such as after the taking of cathartics or alcohol;
 - (c) More mucus is also secreted during periods of emotional strain.

The intestine is supplied by the autonomic and spinal nerves; and the effect of the stimulation of these nerves by emotion has frequently been demonstrated.

The Physiology of Bowel Action

When in the taking of a meal, chewing and tasting of the food begin, movement starts along the thirty feet of alimentary

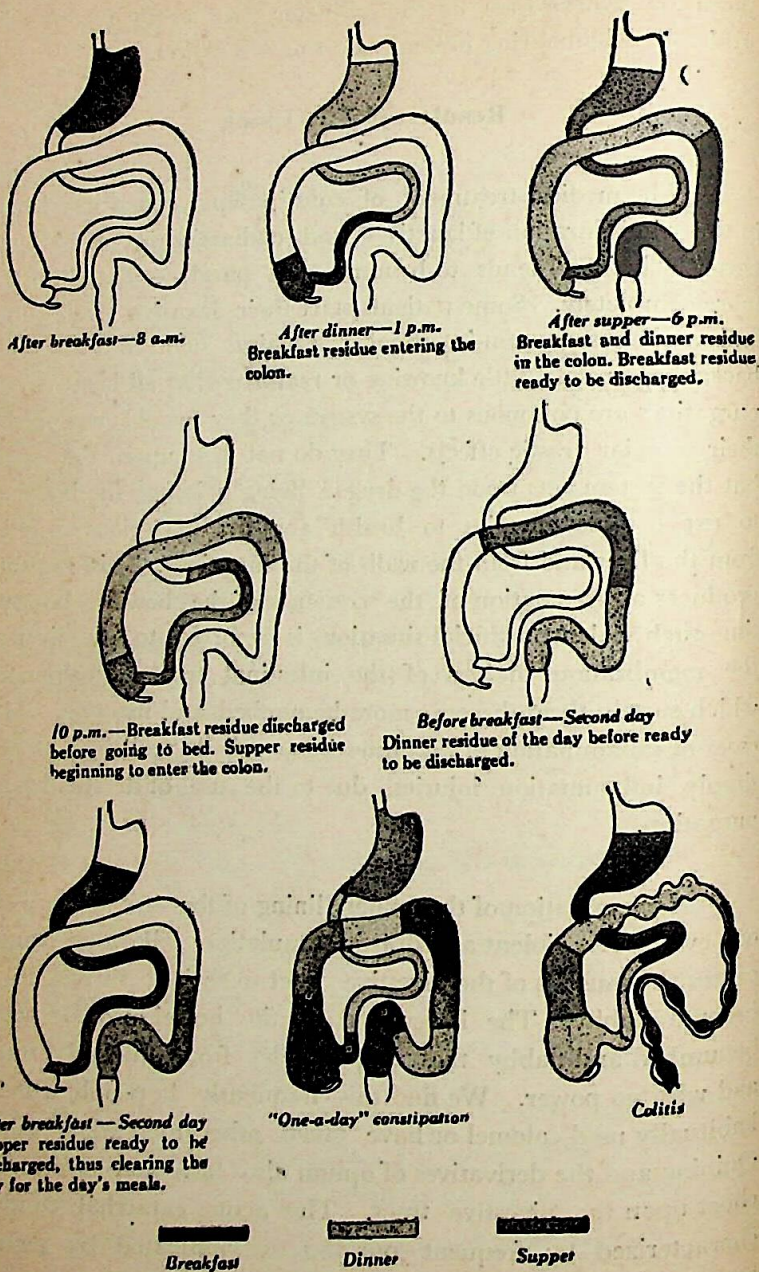


Fig. 1.—The Itinerary of Meals

the intestinal stasis or constipation is clearly demonstrated. You may in fact be highly constipated without realizing it.

Character of the Stool

A study of the stools is a duty which physicians too often neglect in the examination of adults. Not only examination of the stools by the physician is essential, but every person should learn to closely observe the stools from day to day, noting their changing character as influenced by foods and other conditions. The following are the criteria by which the character of the stool is determined :—

1. A putrid, rancid, highly offensive stool is indicative of long delay of residues in the colon with production of a flood of putrefaction products which cause intestinal toxæmia.

2. A slightly sour odour, with no rancidity, especially when little or no gas is present, indicates a good flora and the absence of putrefaction.

3. Much gas, either with or without lactose, is an indication of the presence of colonic infection and the need of changing the flora, *i.e.* of stopping the putrefaction. When lactose is taken for changing the flora, the gas will at first increase, but later will decrease and even disappear.

4. A coated tongue and foul breath indicate intestinal toxæmia and the necessity for clearing the colon of residues and changing the intestinal flora, *i.e.* to exchange the dangerous putrefactive germs which are producing pernicious and foul-smelling poisons for harmless germs which produce acids, and in so doing drive out the disease-producing germs which cannot thrive in the presence of acids. As the flora is changed, the tongue will become cleaner, the breath sweeter, and the stools will become less offensive, gas and offensive odours will disappear.

Important Newly Discovend Causes of Constipation

Hyperactivity, due to excessive overwork, is always followed by corresponding weakness and gradual flabbiness. The ordinary high protein and starchy diet produces excessive amounts of poisonous wastes, ptomains, alkaloids, xanthins (collectively called toxins). These morbid materials are powerful stimulants.

canal from entrance to exit, and all the various laboratories by which the food is treated, prepare for action. The mouth and stomach liquefy the food and prepare it for the real work of digestion and final absorption which takes place in the small intestine. By the end of three to five hours after eating, the digested food will be found at the lower end of the small intestine. Here most of it remains until the next meal is taken, and then a new movement, initiated by tasting and chewing the food, pushes the indigestible and unabsorbed remnants of a meal into the colon, where they are slowly pushed forward by the movements of the diaphragm in breathing. At the next meal another strong forward push is made which, if there are no hinderances, will bring the residues near to exit and may even result in evacuation, which under normal conditions will certainly occur soon after the next or third meal is taken. That is, the unusable residues of food taken at breakfast today will be dismissed, at latest, soon after breakfast tomorrow and the same will be true with reference to dinner and supper.

Thus wisely has Nature arranged that the colon shall be completely cleared of its wastes and residues every twenty-four hours, an evacuation occurring soon after each meal for the dismissal of the residues of the corresponding meal of the day before. The observations of Cannon of Harvard, a pioneer in X-ray studies of the colon, with those of Hurst, Holzknecht and Case, confirmed by many other roentgenologists, clearly show this to be the normal mode of functioning of the colon.

The Colon Efficiency Test

The colon efficiency test should be performed in all cases of constipation to determine the time taken for the passage of the food residues through the intestines. One of the simplest and easiest way of doing it is to take at breakfast ten grains of carmine (two capsules—they should be swallowed in between the meal, and not chewed), and watch for (1) the appearance of the red colour in the stools, and (2) the disappearance of the colour. The normal period for disappearance is 15 to 20 hours. If carmine capsules are taken at breakfast, the colour should disappear at latest at the bowel movement the next morning. A longer time than this indicates the presence of constipation, *i.e.* if the red colour shows or continues to show in the stools for two or three days there after,

muscles of the stomach and intestines can fasten and hold. The average diet is totally deficient in roughage; it is a pasty, soft, mucilaginous diet. It provides no work for the intestinal muscles—consequently they shrink, atrophy, and become soft. They fail to move wastes and food from the digestive tract, this we call constipation.

It is for this reason that the followers of Nature Cure have always advocated the use of whole grain foods and the liberal consumption of fruits and vegetables whose fibrous waste serves as scouring material for the intestinal tract and as a natural stimulant for peristaltic action.

The Importance of Water

Water is an essential member of a well-balanced diet but is usually not given sufficient consideration. Its function is not only to supply the 75 percent which our body is composed of, but also to soften the faecal bolus and thus prepare it properly for excretion. The habit of drinking water freely greatly aids in normal regulation of the intestines and the correction and prevention of constipation.

But too much water may produce an effect just the opposite of that desired. Like everything else, the ingestion of water may be exaggerated to a harmful degree diluting the gastro-intestinal secretions and contents so much as to be irritating and also cause trouble by virtue of its bulk. Too much water drinking is often followed by constipation as a result. Fluid taken in like this in large quantities seems to be absorbed very completely into the blood stream and is excreted by the skin and kidneys in the form of sweat and excessive urination, leaving the contents of the lower intestines even drier as the result of too much drinking.

Too much fluid also has a tendency to dilate the stomach and a dilated stomach means an inactive one, and an inactive one means gas, badly digested food, fermenting food, and with all this comes the intestinal irregularity, diarrhoea alternated with very distressing constipation.

Use of Tobacco

Tobacco acts as a laxative, but its regular use may cause constipation in the same way that do daily dose of purgatives—by

This results at times when the digestive organs become clogged with waste matter, in periodic diarrhoeas. This is the rule during infancy and youth. Gradually, however, continual irritation and overstimulation, with the attendant purging, changes, in accordance with the laws of action and reaction, into the opposite condition of chronic constipation which is aggravated and made more stubborn by the use of laxatives and cathartics.

Congestion of the Liver

Constant clogging of the liver with the morbid byproducts of a high protein and starchy diet leaves that organ in a congested and inactive condition. This interferes with the secretion of bile which in turn causes dryness of the contents of the bowels and deprives them of the lubricants necessary for easy evacuation of the faeces.

The factor of overwork enters also. The liver manufactures and stores a form of sugar prepared from starchy foods such as bread, potatoes, cereals, rice, etc. A person who lives exclusively on this class of food, in time breaks down the liver from overwork.

Meats, fish, eggs, beans, peas, lentils and pulses, the protein foods, are converted into urea and other products by the liver. It follows that the individual who lives almost exclusively on highly protein foods will cause liver overwork and congestion, consequently an interference with bile production and constipation.

Lack of Bulk

Continual over-irritation and over-stimulation resulting from toxic poisoning and the use of laxatives and purgatives also benumbs and paralyzes the motor nerves which supply the muscular walls of the intestines, resulting in partial paralysis and diminished muscular action. This is aggravated by the continual intake of food materials deficient in cellulose and woody fibre such as white flour (*maida*) products and polished rice. The hulls of cereals, which act as natural stimulants to the peristaltic action of the bowels, are removed in the modern "refining" milling process.

The particles of hulls of cereals, the roughage or cellulose part of foods, act as "bulk," a substance upon which the

accustoming the bowels to demand unusual stimulation before they will function. Tobacco also introduces poisons into the blood stream, and the ensuing toxaemia may in turn also be a factor in causing constipation.

Some people wrongly get into the habit of smoking a cigarette before moving the bowels. Such persons are advised to give up the cigarette and use instead a glass of warm water adding a little lemon juice and honey, to be taken warm like tea, before attending to the call of nature. This shall work equally well, if not better, minus the harmful effects of tobacco.

Emotional Factors

The well-known effect of worry in producing constipation is easily understood since Cannon pointed out the fact that worry causes contraction of the descending colon, which he has clearly shown is highly susceptible to emotional influence.

That mental and emotional conditions exert a powerful influence upon the alimentary tract has been amply established by certain experiments made with living animals. For example, X-ray pictures were taken of a healthy cat whose peristaltic movements were normally active. The animal was suddenly confronted with an angry dog barking at her fiercely. Instantly, as the hair on her body and her tail went up as a result of sudden fright and anger, the peristaltic action of the stomach and bowels ceased entirely and did not revive until the animal had thoroughly recovered from its emotional excitement.

Spasm of the sphincter muscles of the anus, or spasm of the rectum, is usually caused by nervous, mental and emotional conditions. The nervous, jumpy, fretful individual always has a tight, tense rectal sphincter (outside muscle). The opposite of spasm, too much relaxation, is met with in victims of the chronic enema habit.

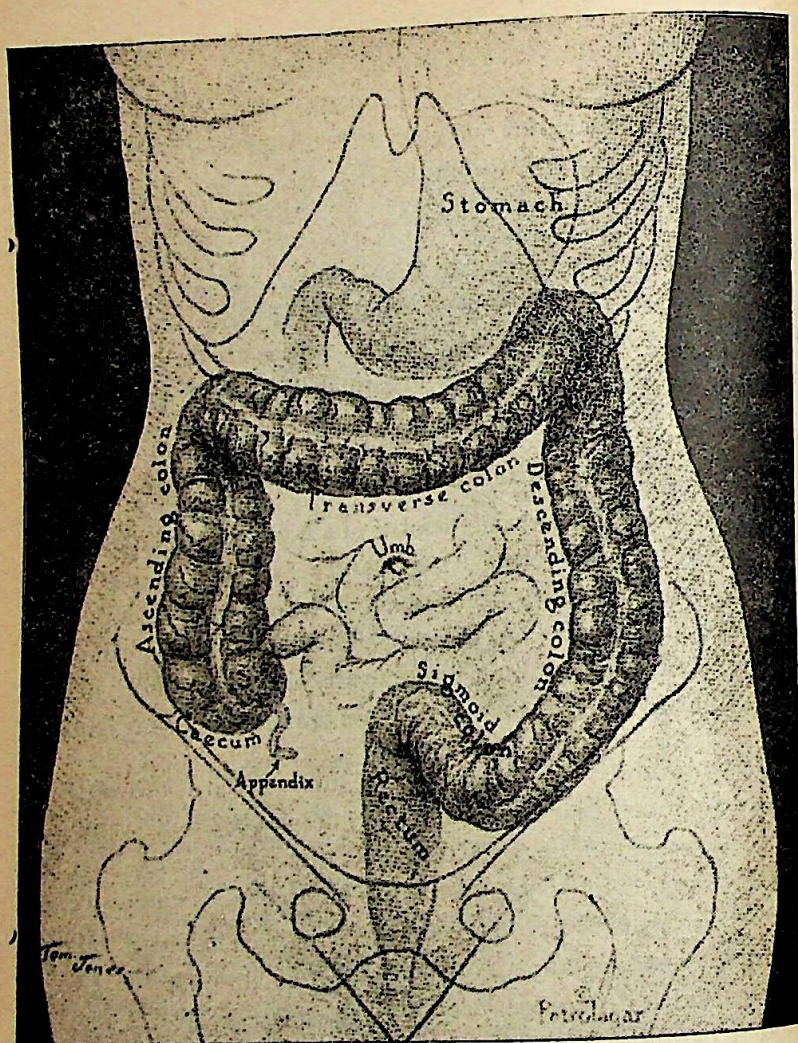


Fig. 2.—The Ideal Colon.

(Courtesy Wyeth)

CHAPTER 3

TREATMENT OF CONSTIPATION

THE TREATMENT of constipation is to remove the cause. This depends entirely upon the type of the existing disturbance. Broadly speaking, there are two types of constipation, namely, (1) atonic constipation in which there is lack of tone, and (2) spastic constipation characterised by excessive tonicity.

In *atonic constipation* the intestinal walls lack muscular tone and become unable to propel the food mass at a normal rate down the tract, or to move the faeces into the rectum. The peristaltic action becomes impaired and fails to work with the other motor processes throughout the entire tract. Atonic constipation usually affects the caecum, and is characterized by caecal dilatation and retention for 48 hours or longer. Or it may affect the descending and the sigmoid colon in which case the descending colon and the sigmoid colon are abnormally distended. Due to the stagnation of material in the colon, bacterial action is greatly increased and the products of this action are responsible for the common symptoms of this disturbance including headache, malaise, bad taste in the mouth, and foul breath.

In *spastic constipation* the small or large bowel is tonically contracted, with resulting discomfort amounting sometimes to colic, often an associated spasm of the sphincter ani, and perhaps band-shaped, narrow cylindrical, or sheep-dung-like faeces. The colon becomes spastic and the faecal mass may be more or less impacted at the point of spasticity. Palpation may sometimes reveal a contracted gut. It may be distinguished from atonic constipation by the presence of mucus surrounding the stool. Spastic constipation usually affects the transverse or descending colon or rectum, the latter called *dyschezia* and characterized by rectal stasis and dilatation. Highly strung, nervous people are more frequently affected by this type of constipation than by the atonic type. Extreme nervous susceptibility of the individual or any substance which

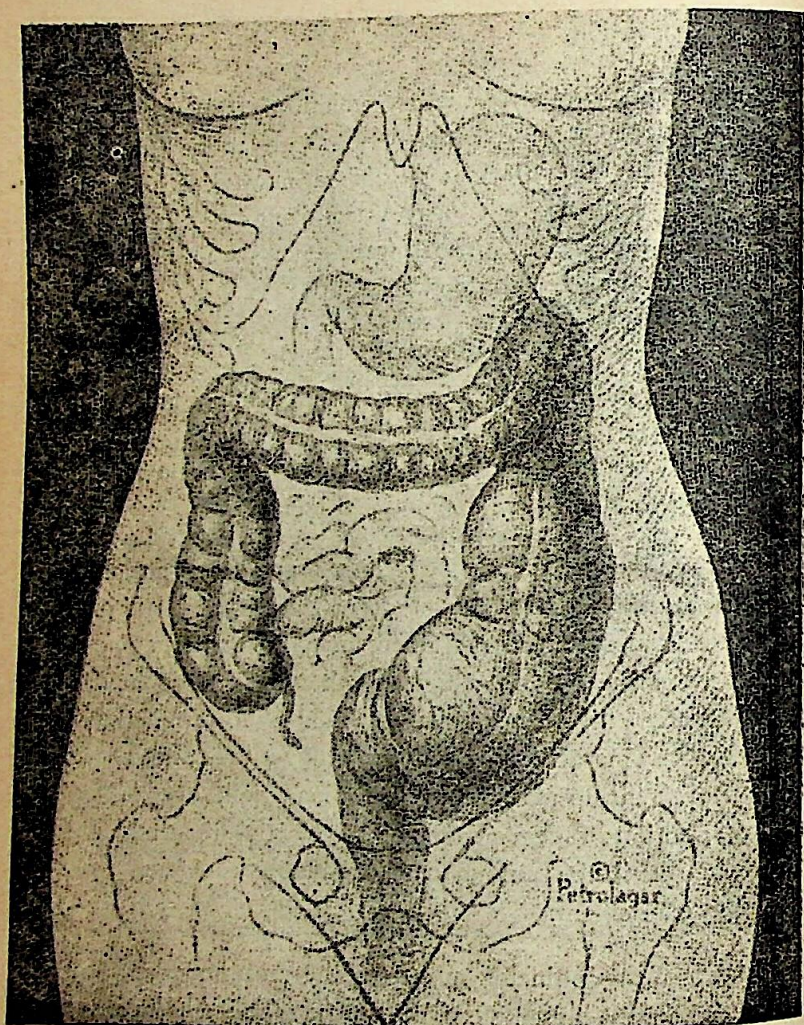


Fig. 3.—Atonic Constipation. Abnormally distended descending colon and sigmoid colon.

(Courtesy Wyeth)

tends to irritate the intestinal mucosa sets up a series of contractions more or less painful in character. The contractions act in a spasmodic manner causing the movement of the food mass to be very irregular, and frequently the movements cause acute pain.

In all types of constipation it is necessary to increase the intake of water, have regular meal hours, and a regular time for bowel movement. Placid individuals living a sedentary life, taking little exercise, eating highly concentrated foods, and drinking an insufficient amount of water must learn to change their food habits. Likewise, highly nervous individuals need to learn how to relax, to avoid substances which have a tendency to irritate the lining of the intestines, and to observe regular habits.

TREATMENT OF SPASTIC CONSTIPATION

Simple spastic constipation is treated the same as mucous colitis. Fresh air day and night, regular hours of eating and sleeping, and a morning warm bath (the bath being preceded by a cup or glass of warm drink).

Planning the Daily Diet.--The purpose of the diet is to correct existing conditions (1) by removing chemical or mechanical irritation which may bring about the spasmodic contractions of the muscular walls, and (2) by providing enough bulk in smooth form to prevent stagnation of the food mass in the intestines, thus promoting its passage down the tract. The diet needs to be modified so that the cellulose is finely divided. Bland foods which will prevent chemical irritation of the tract are indicated.

The Milk Diet. The above indications are met ideally by the exclusive milk diet. Milk is entirely free from all chemical or mechanical irritating substances, and as it lacks in cellulose or rough fibrous material, the faecal mass on the milk diet is not only enough in bulkage but is also of marble smoothness which gives a very soothing effect to the over-irritated intestinal mucosa. The milk diet puts on body weight so quickly as no other diet does. The gain is often at the rate of a pound a day, and as patients of spastic constipation are generally very much underweight, this is an ideal form of treatment for all such cases.

In addition, the milk restores the normal quality, quantity and circulation of the blood, and also normal quantity and effective-

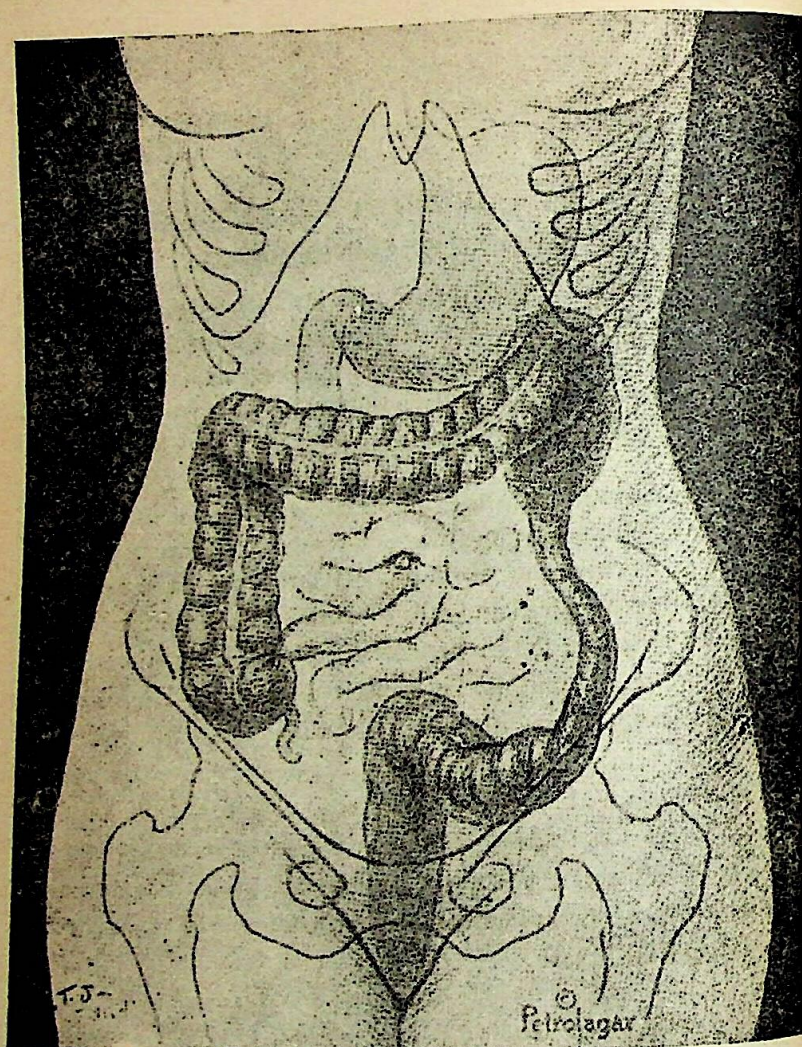


Fig. 4.—Spastic constipation. Pinching down of the descending colon.

(Courtesy Wyeth)

colitis—the character of the diet must remain smooth and bland for at least a year.

It is essential that vitamins A, B and C should be adequate, for they improve the condition of the membranes lining the intestinal tract and render them less susceptible to irritation.

The meals should be small in size, and to ensure adequacy may need to be served in five or six meals, in which case feedings are given in three meals with two or three intermediate feedings.

Thermal stimulation as well as chemical and mechanical stimulation must be avoided. All food should be taken at moderate temperature. Excessively hot or very cold foods should not be taken.

The food should be eaten slowly and thoroughly masticated.

Rest before and after meals is essential.

Water should be drunk freely. Eight to 10 glasses of water are indicated daily in spastic constipation as well as in atonic constipation. A glassful of hot water, containing about 15 grains of sodium bicarbonate, may be taken one hour before each meal.

Purgatives must be avoided and should not be taken.

The most important single factor in treatment of spastic constipation is emphasis on good habits of personal hygiene, relaxation, and freedom from nervous upsets.

Foods allowed. The following dietary is admissible :

Smooth bland foods (may be used liberally)—

Milk, milk drinks or milk beverages, curd, buttermilk.

Cereals (highly milled) :

Rice, boiled, puffed, flaked, puddings.

Wheat, puffed ; chapatis of finely ground whole-meal, preferably *tandoori*, white bread (stale).

Oatmeal.

Sago.

Farina.

Meat, ground or tender, roasted, broiled, baked, boiled, or creamed (all in moderation) :

Bacon

Liver

Fish

Chicken

Adv. Vedit Lamb Collection, No. 10

Lamb

Sweetbreads

ness of the digestive secretions. As all these effects must be secured before a permanent cure of constipation is effected, the exclusive milk diet is the treatment of choice to be followed in all cases where it is possible to follow it.

To begin with, and to prepare the system for the milk diet or for other corrective diet as explained hereinafter, fast for 3 to 4 days, taking nothing but a glass of plain hot water every three hours. If this is considered too drastic and the patient is very weak, instead of plain water, a glass of fresh orange juice or mosambi juice (6 to 8 ozs.), slightly warmed, may be taken every three hours, about three or four times each day. This would give the intestines the much needed rest, and would also clean the intestines of the putrefying mass accumulated therein. No other food of any kind should be taken on these days.

After this preliminary fast or fruit juice diet, the milk diet is begun. On an average, men require from five to six and a half kilos (quarts), and women from four and a half to five and a half kilos of milk daily. It has to be taken in doses of eight ounces every thirty or forty minutes, for about 12 hours daily. No other food is taken with the milk except the orange or mosambi juice. The milk diet should be continued till weight ten percent above the average has been gained.

There is so much to the subject of the milk diet that it is impossible to incorporate complete instructions for its use in this volume. Those who wish to follow it are therefore advised to get themselves properly acquainted with the subject by going through the author's other book *The Magic of Milk*.

When the needed body weight has been gained it is time to change from the milk diet to a solid diet. The following general rules should guide in the formulation of a mixed diet for spastic constipation.

General rules : A soft diet is the basis for treatment, but it should be rich in minerals and vitamins. As the spasticity of the colon improves, foods leaving a greater amount of residue may be gradually increased, but to completely cure and root out this trouble and the attendant inflammation in the colon—the mucous

Fats, butter, ghee, cream, malai, vegetable oils, olive oil.

Sugars, honey, jelly, lactose, molasses, syrup, all in moderation.

Condiments, only a little salt may be used, no other condiments.

Foods to avoid. The following foods should not be taken :

Coarse whole-grain cereals and breads, and cereals containing bran, hot breads and muffins, new bread, Graham or whole-grain crackers, dalia, whole-grain rice.

Most raw fruits, concentrated and highly acid fruits, dried fruits, coconuts, nuts, olives.

All raw vegetables, salads.

Coarse, fibrous, and strong-flavoured vegetables, beans, cabbages, cucumbers, celery, radishes, sem, katahal, onions, garlic, etc. (see list under foods to use in atonic constipation, page 33).

Fibrous and fatty meats, such as smoked meats, salt meats, salt fish, canned or dried fish, pork, veal, lobster, salmon, sardine, crabs, goose liver.

Hard-boiled eggs. Cheese.

All fried or greasy foods. Parantha, puri, kachori, etc. Fried potato, potato chips.

High seasonings, spices and condiments other than salt. Peppers, pickles, sauces, acids, and rich gravies.

Rich desserts and pastries, cakes, pies, candy, jams, marmalade.

Coffee, tea, alcohol, carbonated drinks, mineral waters.

Sample Menus for Spastic Constipation

Vegetarian :
(Grams)

Non-vegetarian :
(Grams)

Early morning on arising :

Hot or cold water

One glass

One glass

Breakfast :

Orange juice

100 ($\frac{1}{2}$ glass)

100 ($\frac{1}{2}$ glass)

Cooked rice

50

—

Bread

--

30 (1 slice)

Eggs, soft-cooked, poached, or baked omelet, one or two.

Desserts, simple and nourishing :

Rice puddings

Tapioca puddings

Ice cream

Sponge cake

Fibre in soft form—

Raw fruits :

Avocado.

Banana (very ripe, spotted).

Mango, ripe, sucking variety.

Melons, Kharbuza, Tarbuz, Phoot.

Peaches (if thoroughly ripe).

Fruit juices (strained), orange, mosambi, grape juice, apple juice, etc.

Cooked fruits, strained free from skins and seeds :

Apples (peeled).

Apricots.

Guavas (without seeds).

Papita.

Peaches.

Pears.

Plantains.

Plums.

Prunes.

Cooked vegetables (mild and soft ; vegetable greens well-boiled and passed through a sieve or pureed) :

Potatoes, baked, boiled, creamed, or mashed (remove skins).

Asparagus tips.

Beet greens.

Beets (young).

Broccoli tips.

Carrots (young).

Cauliflower.

Lady's fingers.

Lauki.

Peas (strained).

Vegetable juices, any, like tomato juice (strained), carrot juice, etc.

Pumpkin.

Mustard greens (Punjabi way).

Spinach (ground or pureed).

Squash.

String beans (young).

Tinda (remove seeds).

Tomatoes (strained).

Torai.

Turnip greens.

Dhal and vegetable soups.

250 to 500 cc., or 8 to 16 ozs., according to the amount retained, of warm olive or cottonseed oil, which has first been shaken with water in order to remove irritating fatty acids. Or, instead of the oil, introduce a half pint or a pint of warm starch water containing half to an ounce of cornstarch and an ounce of lactose. This is continued for about six months, the injections being given at first daily for two or three weeks, then every other day for about a month, and then two or three times a week.

For painful attacks of enterospasm, employ hot abdominal applications like fomentation, etc. Hot sitz-baths at a temperature of 110° F., or as hot as can be borne, for 5 to 15 minutes about one hour before supper are recommended; if necessary the baths may be started at 96° F. and the temperature increased gradually.

Massage, electricity, cold baths, and exercises are contra-indicated in this affection. Hot applications and prolonged tepid sitz baths, temperature ranging from 70° to 85° F., are useful. Prolonged rest of mind and body is essential.

Constipation due to acute proctitis can be relieved in short order by alternating cold (60° F.) and hot (110° F.) enema; the former to be retained for five, the latter for ten minutes.

For spasm of O'Beirne's sphincter due to inflammation, apply hot fomentations to the lower abdomen, and give daily injections of hot oil.

When the bowel is much occluded by hypertrophy of the sphincter, its divulsion may be satisfactorily accomplished by tamponing with a rubber bag distended with air or water left inside as long as may be required. This treatment may be applied daily or two or three times weekly, according to the exigencies of the case.

Caecum mobile is a possible cause of chronic constipation. The treatment consists in the use of an abdominal binder with an accessory pad placed just to the right of the median line, the use, for a while, of daily or less frequent enema of neutral cotton-seed oil, one-half to one pint, alternately with sodium bicarbonate, three percent (to dissolve mucus), and a general invigorating regimen.

Egg	—	50 (one)
Bacon	—	10 (2 slices)
Milk	150 ($\frac{3}{4}$ glass)	100 ($\frac{1}{2}$ glass)
Butter or ghee	50 (10 teaspoons)	50 (10 teaspoons)
Honey	10 (2 teaspoons)	10 (2 teaspoons)

Mid-forenoon :

Cold water (not iced)	1 or 2 glasses	1 or 2 glasses
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Lunch :

Chapatis of finely ground whole-meal	75	75
Vegetable puree	100	100
Potatoes	100 (one medium)	100 (one medium)
Curd	150	150
Butter or ghee	50 (10 teaspoons)	50 (10 teaspoons)
Fruit (as allowed)	100	100
Buttermilk	200 (1 glass)	200 (1 glass)

Mid-afternoon :

Cold water (not iced)	1 or 2 glasses	1 or 2 glasses
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Dinner :

Chapatis of whole-meal	75	75
Vegetables (as allowed)	200	200
Meat (finely ground)	—	60
Milk	150 ($\frac{3}{4}$ glass)	100 ($\frac{1}{2}$ glass)
Butter or ghee	50 (10 teaspoons)	50 (10 teaspoons)
Fruit (as allowed)	100	100

At bed-time on retiring :

Hot water	One glass	One glass
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Nutritive Value of these Meals :

Carbohydrate,	200 g.
Fat,	175 g.
Protein,	60 g.
Calories,	2, 600

Colon Irrigation. Irrigate the colon for about a week with warm normal saline solution (*i.e.*, 78 grains of salt to one pint of water) containing a teaspoonful of sodium bicarbonate to the quart (avoid irritants, such as soap, glycerine, etc.). Thereafter, every night at bedtime, pass slowly into the colon, to be retained overnight, about

The patient should eat slowly, and not overeat.

Fluids should be forced to 8 or 10 glasses daily. A glass of cold water should be taken on arising, and a glassful of hot or cold water one hour before each meal. Water may be drunk freely between meals. Two or more glassfuls with meals is often corrective.

If the patient does not drink adequate water, fruit juices or buttermilk may be given between meals.

If it is not possible to obtain sufficient residue in the diet, agar-agar, psyllium or isaphgool seeds may be used which absorb water and thus supply the necessary bulk.

Mineral oil dressings should not be used as they interfere with absorption of vitamin A and the other fat-soluble vitamins. If considered absolutely necessary, mineral oil may be given at bedtime.

Use of laxative or purgative drugs should be stopped or discontinued.

If the individual is overweight, a low-calorie diet should be instituted.

Emphasis should be placed on good health habits ; that is a regular time for elimination, adequate rest and relaxation, and regular time for meals.

Foods to be emphasized :

Whole grain cereals : Oatmeal, cracked wheat (dalia), puffed wheat, shredded wheat, Graham mush, wild or home-pounded rice ; whole grain breads : whole wheat bread, rye bread made from the whole grain rye flour, cracked wheat bread ; chapatis of whole-meal, or of flour, to which extra bran in the proportion of 5 : 1 is added, bran bread, bran pudding.

Vegetables, especially fibrous and leafy ones : Salads, and raw vegetables ;

Artichokes	Cress	Onion greens
Asparagus	Cucumbers	Onions
Beans	Greens	Parsnips

CHAPTER 4

TREATMENT OF ATONIC CONSTIPATION

EXCLUDING spastic constipation, and the various gross pathological conditions that may act as more or less potent factors in the causation, there remain a certain number of cases without any other apparent cause than atony or torpor or sluggishness of the bowel with diminished secretion. This is the most common type of constipation, and these cases are treated as follows, from six to ten weeks being required to effect a cure.

Enjoy fresh air day and night, regular hours of eating and sleeping, a morning tepid sponge bath, standing in warm water, followed by a cool or cold douche and a vigorous rubdown (the bath being preceded by a glass or cup of warm drink), and lots of outdoor exercise, but rest before and after meals (at least one hour's rest after meals).

Dietetic Treatment

As wrong diet is responsible for a majority of the cases of constipation, proper attention to diet is necessary in the correction of this trouble.

To begin with, fast for three to four days taking only plain water, hot or cold, acidulated with a little lemon juice, or take a glass of orange juice three or four times a day for the first two days, and then on the next two days, two whole oranges, or mangoes, or grapes, or melons, or papita, or apples may be taken every three hours four times during the day. No other food should be taken on these days. The diet thereafter should be formulated on the following principles. Or, as a preliminary, Gouley's 14-Day Diet, described later in these pages, may be adopted straight away, and then after this period of fourteen days, the diet constructed according to the following rules may be taken.

General rules. The normal diet is modified with supplements of fruits, vegetables, and whole-grain cereals for additional fibre, vitamins and minerals.

Sample Menus for Atonic Constipation*Early morning on arising :*

One or two glasses of plain cold water (not iced), or one quart of hot water with juice of one lemon and half-teaspoonful of salt.

<i>Vegetarian :</i>	<i>Non-vegetarian :</i>
(Grams)	(Grams)

Breakfast :

4 dates, or 3 figs,		
or raisins	30	30
Coconut (grated), or		
whole gram (cooked or		
water-soaked germinated)	30	30
Bacon	—	10 (2 slices)
Egg (hard-boiled)	---	50 (one)
Milk	100 ($\frac{1}{2}$ glass)	50 ($\frac{1}{4}$ glass)
Honey	10 (2 teaspoons)	10 (2 teaspoons)
Orange, pear, or apple	100 (one)	100 (one)

Mid-forenoon :

Naturally cold water		
(not iced)	1 or 2 glasses	1 or 2 glasses

Lunch :

Chapatis of whole-meal		
plus bran (5 : 1)	50	50
Whole pulses (cooked)	40	40
Green leafy vegetables	100	100
Vegetable salad	100	100
Curd	200	200
Butter or ghee	50 (10 teaspoons)	50 (10 teaspoons)
Buttermilk	200 (1 glass)	200 (1 glass)

Mid-afternoon :

Fruit juice	200 (1 glass)	200 (1 glass)
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Beet greens	Kale	Peas
Beets	Kohlrabi	Radishes
Brussels sprouts	Lentils and legumes	Rhubarb
Cabbage	Lettuce	Salsify
Carrots	Lima beans	Sauerkraut
Cauliflower	Mushrooms	Spinach
Celery	Mustard greens	Tomatoes
Corn	Olives	Turnips

Fruits of all kinds especially those that may be eaten with skins, dried, raw or stewed fruits, seedy fruits, fresh or cooked juicy fruits after each meal : orange (for breakfast), baked apples, prunes, tamarinds, grapes, grape juice, raisins, melons, guavas (with seeds), mangoes, pears, peaches, plums, berries, currants, figs, dates.

Milk, malted milk, buttermilk, koumyss, curd.

Fats, butter, ghee, cream, olive oil.

Foods to limit :

Dilute foods like soups, fruit juice, milk ; excessive seasoning ; coffee or tea ; desserts of milk and eggs ; meats.

Foods to avoid :

Sugar

Highly milled cereals and foods made with white flour, farina, sago, puffed rice, white rice, pearled barley, corn flakes.

Potatoes

Concentrated foods: Pastry, pies, rabri, khoa, rich cakes, cheese, fried, greasy foods, nuts.

Strained fruits and vegetables; clear soups.

Cocoa, chocolate, thick broths.

Liver, pork, salted, patted or smoked fish and meats. Excess of eggs, and milk.

Wines, and other intoxicating drinks.

CHAPTER 5

ACCESSORY FOODS

IN ADDITION to the colon-stimulating materials supplied by natural foodstuffs, there are a few special materials the value of which is so great that they may be considered as indispensable dietary accessories for aiding and regulating the badly damaged colon. Some one of these food accessories, or some combination of the two or more of them, will rarely fail to enable the colon to function in a normal way.

Bran

The outer covering of grains consists of indigestible fibre which is admirably adapted to meeting the needs of the sluggish colon by giving bulk to the food residues and by stimulation of the nerves of the intestine, not by irritation but by titillation. This mechanical action is a precious resource because it is natural and harmless, not habit-forming or in any way injurious. Where sufficient residue is not obtainable through diet alone, it is wise to make use of a definite amount of bran at each meal. A large tablespoonful is not too much for the ordinary colon, and slow colons sometimes require two. Bran may be eaten with soup, vegetable broth, stewed fruit, a little cream or combined with a cereal, or with a vegetable puree, or in the form of bran pudding. Bran is not only anti-constipative but has a high food value also because of its iron and other minerals and its rich supply of the precious vitamin B.

However, persons who suffer from colitis with great spasticity and pain in abdomen, should not use bran. In such cases psyllium or isaphgool seed is preferable to bran and should be used when the carmine test shows delay in the colon for more than twenty-four hours.

Psyllium or Isaphgool seed

Psyllium or isaphgool is a mucilaginous seed which is useful for both constipation and diarrhoea. Its efficiency is due to the

Dinner :

Chapatis of whole-meal		
plus bran (5 : 1)	50	50
Vegetable salad	100	100
Green leafy vegetables	100	100
Root vegetables	100	100
Meat	—	60
Groundnut (roasted), or		
coconut (grated)	50	—
Butter or ghee	50 (10 teaspoons)	50 (10 teaspoons)

At bed-time on retiring :

Apple, or papaya	100 (one)	100 (one)
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Nutritive value of these meals :

Carbohydrate,	200 g.
Fat,	175 g.
Protein,	60 g.
Calories,	2,600

doing it prevents stagnation of the bowel contents. A dessert-spoonful may be taken every night before retiring. It does not excite the bowels as the laxative and purgative drugs do, and so is harmless. But it should not be taken with meals, because it readily absorbs the fat-soluble vitamins A, D, E and K, and thus deprives the body of these valuable vitamins by washing them from the body with the faeces. It is for this reason that the Journal of the A.M.A. has repeatedly published warnings to physicians not to recommend mineral oil for human use.

Lactose of Sugar of Milk

Milk sugar or lactose is the most remarkable of all the sugars. It is found only in milk, and is present in the milk of all mammals. It differs from all other sugars in several particulars, one of the most remarkable and important of which is its effects upon bacteria. Harmless germs which produce lactic acid develop rapidly in the presence of lactose, while putrefactive and pus-forming, disease producing germs soon cease to grow and disappear. This property gives to milk sugar a protective quality that is peculiar to it. Cane sugar not only lacks this protective quality, but actually encourages the growth of streptococci, or pus-forming germs (Cruickshank). It is for this protective quality of lactose that Nature puts this sugar into the first food of all young mammals. It is because of the presence of lactose that milk sours, while meats putrefy. This is clearly shown by a simple experiment. A piece of meat put into milk will not putrefy.

Milk sugar is more slowly absorbed than other sugars. This permits its distribution along the whole length of the intestine and so provides for protection of the whole digestive tract. By using lactose in liberal quantities, putrefactive and other pernicious bacteria which cause colitis and other infections may be suppressed. This is known as changing the intestinal flora.

Intestinal flora needs changing in all cases of constipation where the stools are foul-smelling and offensive. The best means of changing the flora thoroughly and quickly is to flood the intestine with large quantities of lactose. This enables the protective acid-forming germs to grow most luxuriantly, while hindering the growth of the "wild bacteria" that give rise to putrefaction, colitis

surprising quantity of jelly-like mucilage which it gives out when moistened.

A dessertspoonful of psyllium at each meal is a highly dependable colon regulator which rarely fails when systematically used. More may be used if necessary. Sometimes a teaspoonful at each meal is sufficient.

There is no danger of irritation from the seeds for each one is surrounded with a layer of thick mucilage, so that in use, psyllium is a lubricant as well as a stimulant, and hence is an ideal means of assisting the crippled colon.

Psyllium, like bran, should be made a part of the meal instead of being taken as a medicine. With hot water it forms a jelly-like mass resembling tapioca in consistency, and is practically flavourless. Eaten with cream and sugar or fruit juice, it is an agreeable dessert.

Psyllium and its relatives of the plantago family is one of the most useful aids to crippled colons yet discovered. It seems to have no contra-indications and may be used in many cases of constipation for any length of time without ill effects.

Agar-agar

Agar-agar is a Chinese or Japanese seaweed and is a simple mechanical means of correcting constipation. It can be used either alone or mixed with the diet. It is somewhat like bran, but unlike bran its effect is secured through its ability to absorb and hold in its porous cellulose structure large amounts of water. Further, it is not irritating to the mucous membrane of the intestines. A tablespoonful or more may be taken with a little water or the material may be added to the cereal or to any other dish of the meal, and used in this way temporarily in some more or less stubborn cases of constipation.

Mineral Oil

Mineral oil, or the liquid paraffin as it is called, gives considerable relief in those cases of constipation where the faeces become hard and dry. This oil has an advantage over vegetable oils and other fats in that it is not digested and absorbed; it simply lubricates the walls of the alimentary tract, and in so

CHAPTER 6

FOURTEEN DAY DIET FOR RELIEF OF CONSTIPATION

(By Claire M. Gouley, M.D., slightly modified by S. J. Singh to suit Indian conditions)

First Day

Juice of two oranges (6 to 8 ozs.) every two hours continued from morning until bedtime.

Second Day

Juice of one grapefruit (or two mosambis), 6 to 8 ozs., every two hours from morning until bedtime.

Third Day

Juice of one or two oranges every two hours from morning until bedtime.

Fourth Day

Breakfast—One-half glass (4 ozs.) juice of black figs (or tomatoes); one grapefruit (or two mosambis); and two oranges.

Lunch—Soup of celery (or radish leaves), tomato and spinach.

Dinner—Turnips, beets; stewed prunes.

Bedtime—One-half glass fig juice or tomato juice.

Fifth Day

Breakfast—One-half glass juice of black figs (or tomatoes); two bananas with cream; one tablespoon bran.

Lunch—Tomato juice; spinach and carrots; stewed prunes.

Dinner—Ground raw carrots and celery (or tender cabbage), lemon juice dressing; string beans (or green tender gram—*boot*), peas, parsnips (or tender fresh coconut), melon or apricots.

and other colon troubles. The best effect is obtained by taking the sugar an hour before eating. It should be taken in doses of three ounces, three times a day for a week or ten days in succession. It should be taken with a liberal quantity of water. A full dose requires about 12 to 16 ounces or two large tumblerfuls of water. A convenient way for taking is to put about one-half the dose, three heaping dessertspoonfuls in a tumbler, and an equal quantity of hot water, stir quickly with a fork till smooth, then add hot water to fill the tumbler. After swallowing this quickly, prepare and take another similar dose. Repeat this before each meal.

With lactose feeding as advised above, there is not infrequently at first a very marked looseness of the bowels, and also an increase in gas production. A lessening of the dose to one ounce three times a day will usually correct this. With the change of flora the tendency to diarrhoea and gas-formation shall disappear. The disappearance of putridity of the stools and also of gas are an indication that the change of flora has taken place.

With some persons only a small quantity of lactose taken in hot water at bedtime is effective in producing a satisfactory bowel movement the next morning. There is no harm in continuing this over long periods.

In cases of spastic constipation and colitis, it is also helpful to introduce lactose directly into the colon by means of an enema. (See page 31.)

Dinner—Cottage cheese (or fresh curd) with chopped spinach; buttered beets; raw celery (or grated *lauki*); boiled whole rice with cream (or *ghee*).

Tenth Day

Breakfast—One grapefruit (or two mosambis); one glass orange juice; stewed black figs and raisins.

Lunch—Cream of celery soup (or spinach soup); cottage cheese (or fresh curd); salad of raisins, celery (or tender cabbage leaves), ground carrots.

Dinner—Baked potato, brussels sprouts or swiss chard (or tender cabbage leaves), bananas and top milk (or fresh curd).

Eleventh Day

Breakfast—One-half glass juice of black figs (or black carrots); orange juice; two baked apples and cream.

Lunch—Sauerkraut (or baked onions), stewed tomatoes; spinach, dates.

Dinner—Poached egg (or soup of whole pulse, say *urad*); turnips, beets, stewed raisins.

Twelfth Day

Breakfast—Orange juice; melon or pineapple; poached egg on toast (or fresh curd with banana or one small wholemeal chapati).

Lunch—Tomato juice, brocolli (or tender grated *lauki*), watercress (or water-chestnut—*singhara*), bananas and cream.

Dinner—Baked potato; one-half head lettuce; salad of avocado (or fresh grated or ground coconut), ground (black) carrots and pineapple.

Bedtime—One-half glass fig juice (or grape juice).

Thirteenth Day

Breakfast—One-half glass juice of black figs (or grape juice); one grapefruit (or two mosambis); bananas and top milk (or fresh curd).

Lunch—Soup of whole rice, onion, celery (or spinach); cottage cheese (or fresh curd) with pears or pineapple.

Bedtime—One-half glass fig juice or tomato juice (may be discontinued when too laxative).

Sixth Day

Breakfast—One-half glass juice of black figs (or tomatoes); one grapefruit (or two mosambis); and few slices of pineapple.

Lunch—Cottage cheese with chopped spinach and parsley (or fresh curd with grated cucumber and grated raw *lauki*); boiled onions or sauerkraut; apricots.

Dinner—Baked potato; one-half head lettuce with olive oil (or mustard oil) and lemon juice dressing; prune whip (or papaya).

Seventh Day

Breakfast—One-half glass juice of black figs (or tomatoes); sliced oranges and pineapple.

Lunch—Soft boiled egg (or fresh curd); spinach; salad of lettuce, ground raw carrots and raisins.

Dinner—Soup of raw chopped spinach, simmer few minutes, add raw milk and little butter, turnips, sauerkraut (or onions), and handful of raisins.

Eighth Day

Breakfast—Orange juice; two bananas with top milk (or curd) and tablespoon bran (of wheat, or *isaphgool ki bhoosi*).

Lunch—Tomato juice; salad of apples, celery (or tender cabbage leaves), ground raw carrots, pineapple, broccoli, beets and (turnip) tops.

Dinner—Endive (or *bathu* leaves); baked onions; salad of watercress (or *khira*), lettuce, and celery (or tender cabbage leaves); one avocado (or raw coconut 2 ozs.).

Ninth Day

Breakfast—Orange juice; black figs; bananas and top milk (or fresh curd) with tablespoon bran (or *isaphgool ki bhoosi*).

Lunch—Salad of avocado (or grated coconut), bananas, pineapple and lettuce; two slices of whole wheat toast; spinach and turnips.

CHAPTER 7

EXERCISE AND MASSAGE

NEXT to diet exercise plays an important role in the treatment of constipation. Neglect to take proper exercise is one of the causes of constipation. To correct this lots of outdoor exercise like walking, running, jumping, rope skipping, tennis, swimming, rowing, horseback-riding, mountain climbing, etc., is desirable. But where these preferable outdoor sports are not possible, the following exercises recommended by Gant may be practised once or twice daily, each exercise being repeated five to ten times.

Gant Exercises

1. Standing erect, with the legs together, slowly bend the trunk at the hips as far as possible to the right and left, and forward and backward.
2. Lying supine, raise the trunk to a right angle with the legs.
3. Reverse the procedure by raising the legs to a right angle with the trunk.
4. Lying supine, flex the knees and draw the thighs close against the abdomen.
5. Standing erect, with hands crossed behind, quickly change to the squatting posture.
6. Leaning forward, draw up the abdominal muscles and diaphragm repeatedly, at the same time taking deep respirations.
7. With both arms extended at a right angle from the body, walk on tip toes.

Morgan Exercises

Morgan has recommended the following exercises for correcting constipation:

- Group 1. Lie flat on the back, without a pillow, with arms folded on the chest. (a) Slowly raise the right thigh to

Dinner—Onions baked in skins; carrots and peas, creamed; salad of lettuce, tomato, grapes, with mustard oil and lemon juice dressing; raisins, almonds.

Fourteenth Day

Breakfast—One grapefruit (or two *mosambis*); black figs; whole wheat toast (or *chapatis*); two soft boiled eggs (or fresh curd).

Lunch—Soup of spinach (ground), add to milk; sauerkraut (or tender cabbage leaves), peas, apricots.

Dinner—Baked potato; cottage cheese (or curd); one-half head lettuce; bananas and cream.

NOTE: The above outline for meals answers the requirements of the ordinary case of constipation. All vegetables in list should be steamed unless stated otherwise. Use one heaping teaspoonful rice polishing after each breakfast. This diet may be continued for several months with benefit by addition of small amounts of heavier food.

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Lunch—Soup of spinach (ground), add to milk; sauerkraut (or tender cabbage leaves), peas, apricots.

Dinner—Baked potato; cottage cheese (or curd); one-half head lettuce; bananas and cream.

NOTE: The above outline for meals answers the requirements of the ordinary case of constipation. All vegetables in list should be steamed unless stated otherwise. Use one heaping teaspoonful rice polishing after each breakfast. This diet may be continued for several months with benefit by addition of small amounts of heavier food.

(d) Carry the leg backward and upward until the heel touches the buttocks. (e) Slowly return to the original position. (f) Repeat with the left limb. (g) Carry right thigh up until it is strongly flexed upon the abdomen. (h) Repeat with left limb.

Group 8. Position as in Groups 4, 5, and 7. Rise on toes from ten to twenty times.

Special Abdominal Exercise

For those people who are busy and do not have enough time to go through all the above movements, the following exercise for abdominal muscles is recommended:

Lie on the back with the hips bent, and feet placed on the couch or bed. Now pull the abdomen in, and immediately let the abdomen expand again. Repeat this extremely rapid, in-and-out jerky movement fifteen to twenty times. Then after a little pause resume the exercise again. The back has to remain in contact with the couch or bed; it is essential that the breathing remains quiet and regular. On no account must the breath be held, or must the breathing-out movement be forced.

This exercise produces active hyperaemia of the abdominal organs, helps against venous congestion in the abdomen, encourages peristalsis, and relieves abdominal spasm. It is very useful in atonic constipation with flatulence, but is contra-indicated in cases of inflammatory processes within the abdomen as in spastic constipation.

Yogic Exercises

The following yogic exercises are recommended in those cases of constipation which require the removal of the stool. These exercises are not habit-forming, and there is no danger of the normal reflex ceasing to function with these special exercises which have been practised by the yogis for more than 3,000 years.

Exercise 1.—Sit with knees straight. Bend forward and touch the toes with your finger tips, at the same time opening the anus (as if having a motion); on leaning back contract the anus. This exercise is to be carried out every day for fifteen to twenty minutes, with intervals.

Exercise 2.—Squat in a bath which is partly filled with water; the knees should not touch the floor of the bath, and the heels

right angle, with the leg extended while counting ten and slowly lower it to the floor while counting ten. (b) Repeat the same manoeuver with the left limb. (c) Repeat same manoeuver with both limbs at the same time.

Group 2. Position as in Group 1. (a) Slowly raise right thigh to a right angle with the body while counting ten; then carry it slowly to the left as far as possible while counting ten; then slowly return it to the floor by the same route. (b) Repeat with left thigh.

Group 3. Position as in Group 1. (a) Flex right leg upon right thigh. (b) Flex thigh upon abdomen five times rapidly. (c) Repeat with left limb. (d) Repeat with both limbs.

Group 4. Assume standing posture, with hands on hips. (a) Bend trunk forward as far as possible. (b) Resume erect posture and bend as far backward as possible, always keeping the legs rigidly extended; perform these movements from five to ten times. (c) Same position. Carry the trunk over to the right side eight to ten times. (d) Repeat, carrying the trunk to the left side. (e) Position the same. Rotate the trunk to the right side upon the spine five to ten times. (f) Repeat, rotating the trunk to the left side.

Group 5. Position as in Group 4. (a) Carry trunk forward. (b) Without assuming the upright position, carry the trunk to the left and backward to the upright position. (c) Repeat in opposite direction.

Group 6. Position as in Groups 1, 2, and 3. (a) Slowly raise the head from the floor, while counting five and lower in the same manner. (b) With arms folded over the chest, raise the trunk from the hips slowly to a sitting position and then return to the recumbent position. (c) With arms folded over the chest and shoulders kept squarely upon the floor, roll the legs and trunk to the left so that their weight is on the left side, the shoulders still being flat on the floor. (d) Repeat with the opposite side.

Group 7. Position as in Groups 4 and 5. (a) Bring thigh to right angle with the trunk with the leg flexed. (b) Extend the leg upon the thigh slowly. (c) Slowly return to the original position.

placing the soles of the feet on the sheet. Relax the abdominal muscles. There are two methods. *The first method:* Place the right palm on the right lower abdomen and the left palm on top of the right hand. With the right hand, assisted by the left hand on top, stroke the area on the right side of the abdomen up to the costal margin, then across to the left costal margin, and then downwards along the left side of the abdomen, breathing out while doing so. Then breathe in while the hands go back to the right lower abdomen. This semi-circular movement is repeated fifteen to twenty times.

The second form of abdominal self-massage consists in tapping the abdomen with the finger tips of the right hand along the same course followed when stroking. The stomach area is tapped only very lightly. The tapping is repeated ten times along this course.

In dyschezia, or difficulty in emptying the rectum, try forcible pressure with the fingers between the coccyx and anus during defaecation.

VIBRASAGE

Mechanical vibration or vibrasage is more effective than manual massage, and produces better and more marked results in shorter time. Use a good vibrator. Treat over the pneumogastric for the purpose of stimulating peristalsis, and over the splanchnic area for its nutritional effect, then over the abdomen, with moderate pressure—following the course of the colon—up the ascending, across the transverse, and down the descending colon, and particularly over the sigmoid flexure where the nerves are proverbially inactive. This treatment is of great value.

ELECTRICITY

No single method of treatment of constipation has given better or as good results when properly employed than the so-called electrical stimulation in their various modalities. At times amazing results may be obtained by this method. Electrical stimulation will correct sluggish peristalsis by causing the intestine to contract more forcibly and in the proper rhythm. Through the deep contractions caused by these means, the

should press against the buttocks. Separate the buttocks by pressing the heels apart and thus opening the anus, at the same time breathing out as deeply as possible. This causes negative pressure in the rectum, and a small quantity of water enters. Then close the anus and repeat the exercise a few times, thus giving yourself an enema. The bowel is then emptied.

Both these exercises, especially the second one, have to be practised for some time before you may carry them out well.

Massage

Formerly this form of treatment enjoyed greater popularity than today, mainly because we have at present many substitutes which are either more efficient or simpler in their application, particularly since electricity has come to our aid as a therapeutic agent. However, massage should be mentioned here, because it is an important adjuvant to the treatment of constipation and can be employed by the patient himself when the other appliances are not easily available. The technique varies considerably, depending upon the preference of the operator and the condition of the patient, but the principle in every case is more or less the same, that is, to knead the abdominal muscles and contents thoroughly in the direction of their natural course, and thus aid in the active as well as passive propulsion of the faecal column. This method, when properly employed, is very valuable and is recommended when electrical treatments are unavailable.

Abdominal massage may be practised for fifteen or twenty minutes twice daily (before arising and on retiring, or several hours after meals), with the hand (bimanual kneading); or with a leather or felt-covered two to ten pound cannon ball or bowling ball, the patient's head being raised and the legs and thighs slightly flexed in order to relax the abdominal muscles. The bladder should be empty. Begin the massage over the descending colon in order to empty this first. Then active stimulation over the head of the colon and sigmoid, and a continuous treatment along the line of the large intestine will give the best results.

Abdominal Self-Massage.—Abdominal massage can be practised by the patient himself. Lie on the back, bend the knees

CHAPTER 8

HYDROTHERAPY OR WATER CURE

Douches of cold water; large linen compress wrung out of cold water, covered with flannel and worn all night; and the cold sitz-bath for no longer than five or six minutes, taken about one hour before supper, are also recommended. The temperature of the cold sitz-bath should be from 45° F. to 60° F., and the skin in contact with the water should be rubbed vigorously. This cold bath produces a tonic effect and is very useful in atonic constipation. In painful conditions of constipation with flatulence, the hot sitz-bath is of value. Start at 96° F., and increase the temperature gradually to 110° F. or as hot as can be borne, duration 15-20 minutes. Alternate hot and cold sitz-baths are recommended for cases of chronic atonic constipation. A good plan is cold friction bath every morning, and alternate hot and cold sitz-baths before retiring. If very toxic, steam bath once a week.

The ethyl ether spray to the abdomen for five to fifteen minutes thrice daily is also helpful.

The Enema

The enema may be used for cleansing the bowels but it should not be used habitually. Two types of enema outfits are available in the market. One consists of a rubber bulb with a nozzle which is filled with water; the bulb is squeezed, and the water pumped into the bowel. The other is a container, which is hung up, the water entering the bowel by force of gravity. The first type can be used with advantage for children. The water is squeezed out very slowly and the buttocks are held together afterwards for a few minutes before the child is allowed to empty the bowel.

For adults, the gravity douche is the best type. The well-lubricated nozzle or (better still) a long rubber tube connected with the douche should be introduced into the bowel. Before

circulation is greatly stimulated so that congestions are promptly relieved. At the same time, the intestinal glands, as well as the accessory organs, namely, the pancreas and liver are caused to pour out a greater amount and a better quality of secretion. The abdominal muscles are strengthened by these passive contractions, which is of special importance in people who lead sedentary lives, those who naturally have weak abdominal muscles and women who have borne several children causing the abdominal musculature to be relaxed and the recti to be separated. The lymph is more forcibly pumped through its circulation and a more rapid absorption of food material into the system will result.

Electricity may be employed in daily five-minute sittings. If faradism is employed, one electrode may be placed within the rectum (best in inefficient defaecation or dyschezia), the other moved about constantly over the colon from right to left. A roller electrode may be used. The sinusoidal current of slow periodicity is especially recommended and may be used as above. Or, the two electrodes may be placed alongside the spine in the dorsal region, having the seventh and eighth dorsal vertebra as the centre and passing the sinusoidal current from one electrode through the spinal nerves to the other and thus cause a contraction of all the voluntary and involuntary muscles innervated by these spinal nerves. Or, place one large electrode in the back, covering the dorsal region and another smaller one or the roller electrode upon the abdominal wall and moving it around in the direction of the course of the colon.

If galvanism is used, the anode is placed over the spine, and the cathode moved with deep pressure over the colon. The current should be interrupted from two to six times a second.

The head should be raised and the knees drawn up during the treatments, and the bladder should be empty. Thirty or forty daily sittings are sometimes required.

administration should be gradually reduced as the constipation improves. In some cases in which the colon is very badly crippled, the continuous and systematic use of the enema at bedtime is required. The best temperature for such cases is usually 110° to 115° F.

When the constipation is chiefly of the rectal type (dyschezia) and of long standing, an enema is usually helpful in training the rectum to respond to the proper stimulus. Give a rectal injection of 5 to 10 ounces of paraffin oil before bedtime to be retained for the night. Next morning an enema of half pint of normal saline may be necessary. Gradually reduce the amount of these enemata, until the bowels can be evacuated without their aid.

An enema should be used only so long as is necessary to completely cleanse out the colon. It is not desirable to continue its use over long periods. After the colon has been completely emptied, proper diet should keep the bowels in order.

PLUG-REMOVAL IN IMPACTION. In the emergency treatment of impaction that sometimes occurs either chronically or acutely in constipation, it is necessary that the plug be removed as quickly and completely yet as gently and easily as possible.

A small douche tip on a fountain syringe tube may be oiled and gently inserted into the rectum alongside of the plug; fairly warm water flowing from this syringe tip usually will slowly disintegrate the plug and allow it to pass piece by piece. In some cases this is not effective; here it is better to use warm sweet oil. This may very quickly secure results, or the oil may have to be retained for some time. The patient should, if possible, be in the "evacuation posture" and should be making gentle straining effort. The rectum may be oiled in order to lubricate it and assist it to relax better.

If this does not secure relief then the oil should be injected, the rectum lubricated externally as well as internally, and an oiled finger inserted and gently used to break up the faecal mass. After this has been discharged, oil should be injected and allowed to remain for soothing the irritated membrane and making the next passage more assured and easier.

inserting the nozzle or tube a little water should be allowed to flow out so that any air that may be locked in the tube is removed. Lie on the left side while the water enters the bowel. The water should run in very slowly—it should take about twenty to

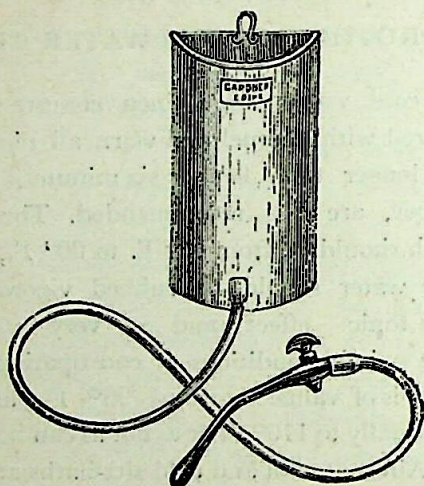


Fig. 5—*The Gravity Douche.*

thirty minutes for the container to empty. Then after removing the nozzle or the rectal tube, turn to the right side and try to hold the enema for another twenty to thirty minutes, before emptying the bowel. If it is desired that the fluid run higher up in the bowel, you should take up the knee-chest position while the water enters.

The water should be at blood temperature. Soap should not be added as it may prove irritating. Care should be taken to avoid injury through overdistending the colon by using too large a volume of water. The proper quantity is one to two quarts. Vigorous enemas should be avoided in the older age group because of the danger of rupturing a colonic diverticulum.

A daily colonic enema, consisting of from one to three pints of cool or cold water, may be injected, if three days of regular repairing to the toilet fails. It is best to give the enema early morning or immediately after breakfast. The frequency of

cases. Recently some very interesting work has been done upon this subject by German investigators who claim to have obtained remarkable success in these cases by mental suggestion, hypnosis, and psycho-analysis. Anything tending to upset the nervous equilibrium should be avoided.

CHAPTER 9

CONSTIPATION IN INFANTS

Causes: Habit; irregularity in nursing; too frequent nursing; food insufficient in quantity or strength; too little fat; too much fat; too little sugar; too much non-fermentable carbohydrate, *e.g.*, dextrins; boiled or sterilized milk; gastric indigestion; anorexia; excessive vomiting; muscular atony (rickets, malnutrition, abuse of purgative drugs, suppositories, and enemas); constipation, lack of exercise, and tea-drinking in the mother; small anus; tonic spasm of the anal sphincter due to fissure, haemorrhoids, or polypus; congenital narrowing or twisting of the large intestine; dilatation of the colon.

Treatment: Attend to the patient's dietary. If the infant is nursing at the breast, the mother should engage in adequate exercise, to keep the bowels regular, and to eat more carbohydrate and fat and less nitrogenous or protein food. If there are curds in the baby's stools, the baby should receive several teaspoonfuls of warm boiled water, plain or sweetened, or barley or oatmeal water, before each nursing. Barley and oatmeal waters are laxative, lime water is constipating. Cream, $\frac{1}{2}$ to 1 teaspoonful, may, in cases of fat deficiency, be given before each or every other nursing, or olive oil or cod-liver oil, but usually perhaps, more fermentable carbohydrate is required, *e.g.*, after each nursing, an ounce or more of cereal water containing 5 to 10 percent lactose, or else $\frac{1}{2}$ to 1 ounce of 10 percent aqueous solution of malt soup extract, together with fruit juices (orange or prune)

In some of the cases that lead to impaction, drugs, mineral waters, laxative foods, etc., have been consumed for the purpose of bringing about evacuation. After the plug has been removed a surprising amount of retained liquid substances may come forth in a veritable freshet of scalding, foul-smelling toxic material. This may produce extreme irritation of the rectum. After the discharge has subsided, a cleansing enema should be used, then a small amount of oil injected and retained. Then see that in the future there is no long retention of waste matter in the colon to result in impaction. People who are subject to impaction will find the small enema a positive preventive.

SUPPOSITORIES

Glycerin suppositories, to be introduced into the rectum, constitute a very mild method of opening the bowels. They have to be retained until the glycerin has melted, and are particularly useful in the case of old and weak patients who would find enemas too exhausting.

When the patient lacks the urge to defaecate and has not had an evacuation for a few days, the use of an effervescent or carbon dioxide (Vacuetts) type of suppository may be of benefit to reestablish a normal cycle. A carbon dioxide suppository has the advantage of being less irritating and, by releasing carbon dioxide, increases the volume within the rectum, producing a more normal urge to defaecate. Such a suppository, used in a leisurely setting in which the patient can respond, is frequently helpful in the initial stages of the patient's therapy to reestablish his desire to defaecate.

In severe bowel dysfunction bisacodyl (Dulcolax) rectal suppository (10 mg.) may be used every other day in the morning. It is usually effective within an hour.

PSYCHOTHERAPY

Treatment by suggestion is often effectual, the suggestion being made that the bowels will act at a specified hour. Interesting and absorbing intellectual activity is effectual in certain cases. Various kinds of psychotherapy frequently is of decided benefit in selected

After the age of six or seven months, substitute orange juice, or scrapped raw apple, or prune juice, 1-4 tablespoonfuls, or vegetable purees. If the cause of constipation is inanition or hunger, one should add another $\frac{1}{2}$ to 1 ounce to each feeding.

In obstinate constipation in older children, Kerley injects high into the colon every night, four ounces (or less if immediately evacuated) of olive oil, using a four-ounce bulb syringe and a small adult rectal tube. The oil is to be retained during the night. The next morning, after break-fast, the child is placed on a stool until the bowels move, or until fifteen minutes have elapsed, when a glycerin suppository is used. After two weeks of such treatment, the oil injections are tentatively gradually withdrawn. Two months or longer are required for a cure.

Increasing the mineral intake, especially calcium and phosphorus, increased water intake, an adequate diet including vegetables containing cellulose (cabbage, turnips, spinach, asparagus, carrots, parsnips, onions, etc.), bran on cereal, fruits, wheat germ in spastic colon, yeast, exercise and pleasant occupation, are all important; except that bran is contra-indicated in spastic constipation due to stress and overwork.

and after the third or fourth month, a little apple sauce. Anointing the anus and buttocks with sweet oil is sometimes effectual.

If need be, one or two ounces of warm sweet oil may be injected nightly for a time, or once or twice a week, to be retained overnight; or an oiled glass rod or gluten suppository may be used.

Stretch an abnormally small anus with the finger every two or three days. In tonic spasm of the sphincter, the latter may have to be stretched under ether. Heal fissure in ano if present.

In bottle-fed infants the fat may possibly need to be increased, but it should not be increased beyond 4 percent. The sugar may be increased to at least 7 percent; or malt sugar may be used in place of milk sugar, and in the same quantity; or one or two drams of sweet manna may be dissolved in the day's feeding. Do not reduce the protein below 1.5 percent. The milk may be given raw.

If the baby's stools are dry, crumbly, and soap-like (the baby being flabby, somewhat anaemic, and not thriving), the constipation is due to a disproportionate amount of fat over carbohydrate in the diet. High fat in an alkaline intestine (the alkalinity caused by high protein) forms insoluble soaps with calcium and magnesium; in an acid intestine (the acidity caused by high fermentable carbohydrate, *e.g.*, lactose or saccharose) it forms irritating fatty acids. To correct this type of constipation, more fermentable carbohydrate should be added to the food, both to burn up the fat and to favour acid fermentation in the intestine. Gerstley directs that the milk be diluted by adding two-thirds water and malt soup extract added and gradually increased until the patient improves and the stools return to normal. The amount of milk should be gradually increased, and if constipation recurs, due to the increased protein, more carbohydrate should be added. Malt soup extract instead of cane sugar is used because the latter might be too sweet in the quantities required. If no more than six to eight teaspoonfuls of carbohydrate are needed, cane sugar may be used. The milk is diluted to prevent trouble from high carbohydrate.

(4) Alice H. Everett advocates the following salad which, she says, not only chases constipation, but actually clears your skin, makes your eyes sparkle, so that you begin to look lovely and to feel like living:

Finely chop fresh, raw spinach. Mash up two hard-boiled eggs. Mix spinach and egg together, add olive oil to moisten, a dash of salt, garlic to taste, and serve with sliced tomatoes,

(5) In difficult cases, Dr. Josiah Oldfield recommended a special bread made as follows:

Mix with the flour $1/4$ lb. of whole wheat to every 4 lbs. of white flour. The wheat should have been washed well and then soaked in plenty of water for 48 hours, and then gently simmered in the water in which it was soaked for half an hour until it is quite soft and then the wheat and the water should be mixed up with the flour for the making of bread.

(6) Another simple and useful thing recommended by Dr. Josiah Oldfield is a wineglassful of linseed tea once a day, and still better, a tablespoonful of whole linseed that has been washed and soaked overnight. A tablespoonful of linseed prepared like this, chewed and swallowed, has a gentle laxative effect as well as being a food.

(7) Grape juice, either alone or in the form of grape coffee, is often an effective intestinal activator. Grape coffee is made as follows: Fill a cup about one-third full of grape juice, sweeten it with a teaspoonful of honey, and fill the cup with hot water. If one or two cups of this are taken immediately after a meal, the action of the bowels is usually greatly stimulated.

(8) Bernarr Macfadden recommended the use of orange peel prepared as follows as beneficial to those afflicted with constipation. Boil the peel in water for thirty minutes or so to release the oil, which is more or less irritating to the digestive tract. Then discard the water and eat the rinds as such or sweetened with honey if so desired. This gives a clean indigestible mass of cellulose upon which the digestive apparatus may work.

(9) The following Bran-fruit Wafers were also recommended by Bernarr Macfadden. Take--

SELECTED FORMULAE AND RECIPES FOR CONSTIPATION

(1) A formula that works, and that has proved valuable, at least in psychogenic spasticity of the colon with very intractable constipation, is one devised by a mother superior of a convent and suggested by the Holy Trinity. It is composed of the juices of three large oranges, three lemons and three grapefruit (or mosambi), to which are added three level table-spoonfuls of magnesium sulphate. It should be kept cool (where possible, in the refrigerator). The dose is about one wineglassful (2 ounces), preferably at bedtime, continued till definite improvement has taken place.

(2) Musser and Piersol give the following recipe for making bran muffins:

Bran flour	..	2 cups
Wheat flour	..	2 cups
Sour milk	..	1 cup
Molasses	..	4 tablespoonfuls
Soda	..	2 teaspoonfuls

Bake in muffin pans, one to be taken at each meal. Discontinue bran if it is ill-borne. It is contra-indicated in spastic constipation, which it aggravates.

(3) In very stubborn cases, Dr. Benedict Lust recommends a handful of raisins, soaked overnight in the juice of two lemons, to be taken the first thing in the morning. The lemon juice should be sipped and the raisins carefully masticated. About twenty or thirty minutes afterwards, one or two glasses of warm water (flavoured, if desired, with lemon juice and honey) should be drunk. A bowel movement will often result shortly afterwards. This should not be made a daily habit, and the daily doses of acid from the lemons may not be advisable. This lemon and raisins expedient is, however, generally harmless in an emergency.

SUMMARY

1. Constipation is a condition of stasis in the large intestine so that residues of food taken in the morning fail to appear in the faeces on the following morning and have not completed their passage by the second morning. (Ruth H. Wheeler)

2. Constipation is largely the result of eating the wrong food and of lack of sufficient exercise apart from the suppression of the evacuation reflex and psychological factors. Natural therapy tries to correct these faults.

3. The treatment of constipation is to remove the cause.

4. To find out the cause a complete history and thorough physical examination of the case is necessary to discover the inflammatory conditions that may be present, like gastritis, colitis, etc. The rectal examination frequently provides most useful information.

5. All laxatives should be discontinued. Abdominal symptoms of pain, gas, etc., result more frequently from intestinal irritation by laxatives than from infrequent bowel movements. With the discontinuance of laxatives a number of days may elapse before a bowel movement occurs—this should not cause any anxiety. It may take a few months to reestablish more normal evacuations.

6. Drug laxatives of all sorts, cascara, phenolphthalein, castor oil, salts, mineral waters, and the whole list of chemical stimulants of the colon should not be employed because of their tendency to induce complete obstruction. Where diet alone fails to bring about proper bowel movement, use, instead, the harmless natural laxatives, like sugar of milk, bran, figs, raisins, agar-agar, isaphgool, psyllium seeds, etc. which may be regarded as supplementary foods.

7. When the stools are hard and dry, and one has to strain for defaecation, the use of psyllium seed, isaphgool, or agar taken

- 1 pound dates, raisins, prunes, or figs, or a pound of any two of these.
 Bran, a pint to a quart.
 1 pint of water.
 $\frac{1}{2}$ cup of honey.

Soak the fruit overnight in the water, press the pulp into the water, then strain; add the honey and thoroughly mix; add to this water all the bran that can be lightly moistened by it; roll the moistened bran to one-quarter inch thick on buttered paper in large bread pans; press bread knife or other steel lengthwise into the bran so as to form squares or oblong sections; place pans on back of stove or in a very slow oven where the bran will dry *but not bake*; when thoroughly dry break into sections and store in dry place. If desired, the ground pulp of the prunes or dates may be added to the bran.

(10) A fortified milk mixture prepared as follows is useful in extreme cases of constipation of the spastic type with symptoms of gastritis and colitis (Rose Simmonds):

- 2 pints milk,
 2 ozs. dried milk (Ostermilk or any other kind available),
 2 ozs. lactose,
 1 egg,
 1 level teaspoonful of salt,
 $\frac{1}{2}$ pint fresh orange juice.

Mix the dried milk with some of the liquid milk, then add the rest of the milk boiling. When the mixture has cooled, add the salt and sugar, and lastly the orange juice. Divide into the number of feeds required, and flavour, if desired, with Ovaltine or Bournvita.

This is useful in cases where a solid diet is not tolerated, and therefore a fluid diet is necessary. It may also be used with benefit in cases complicated by persistent vomiting. The nutritive value of this diet is as follows:

Carbohydrate,	134	g.
Protein,	57	g.
Fat,	62	g.
Calcium,		1.949 g.
Calories,	1,322	

This may be followed for a few days, and then rapidly increased as the case improves. This is important in view of the prolonged nature of the illness and the under-nutrition which may result from an unnecessarily low diet.

exercises of the abdominal muscles, vibration and kneading of the abdomen, massage of the colon are other beneficial means.

15. In the rarer cases of thin, usually nervous, individuals with a spastic colon, a low residue diet is more appropriate (pages 27-30) and is essential if colitis is already present. It is better and helpful to precede this diet with an exclusive milk diet till weight ten percent above average has been gained. Massage, electricity, cold baths, and exercises are contra-indicated in this condition. Hot applications and prolonged tepid sitz baths are useful. Prolonged rest of mind and body is essential.

with adequate water will increase both bulk and moisture. Or, the use of an emollient (liquid paraffin) will soften the stool.

8. When the stools are offensive and there is formation of gas, the intestinal flora should be changed with a liberal use of lactose or sugar of milk for about a week or ten days.

9. A rule should be made of going to stool morning and evening, say, immediately on arising in the morning or after breakfast, and before supper or before going to bed. Adequate time should be devoted to the act. Any desire for defaecation which occurs at other times, even though very slight, should not be neglected.

10. If one has retained faeces after defaecation, he should learn to take a longer time to have a bowel movement. Frequently, retention is due to the patient having to hurry, with premature termination of defaecation.

11. Any local cause which makes defaecation difficult or painful, e.g., piles, fissures, etc., should be treated and attended to promptly. Sitz baths, with proper cleansing of the anal area manually or by oil retention enemas, may be used as indicated.

12. Fluids should be employed plentifully and a tumblerful of water two or three times a day before meals is often beneficial, especially if the stools are dry, suggesting increased absorption of water in the colon.

13. In most cases of atonic constipation occurring usually in fat and flabby persons, the diet should be sufficiently bulky and contain enough fibre to act as a mechanical stimulus to peristalsis (pages 33-34). Eating a little fruit (and nothing else) at bedtime, say, one or two apples or oranges, or papaya, also aids in securing bowel movement the next morning. A glass of warm milk at bedtime is also helpful to some people.

14. Take regular exercise. It should be regular and moderate, but not excessive. Exercise promotes bowel action, especially walking, horse-back riding, gymnasium exercises, and such exercises as trunk bending, leg raising and deep breathing. Special

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